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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,383	12/12/2003	Jun Han Ahn	0465-1115P	8538

2292 7590 04/23/2009

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EXAMINER	
FLANDERS, ANDREW C	

ART UNIT	PAPER NUMBER
2614	

NOTIFICATION DATE	DELIVERY MODE
04/23/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/733,383	AHN ET AL.	
	Examiner	Art Unit	
	ANDREW C. FLANDERS	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-10 and 12-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-10 and 12-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 – 3, 5 – 10, 12 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burges (U.S. Patent 7,082,394) in view of Tanaka (U.S. Patent 6,148,136).

Regarding **Claim 1**, Burges discloses:

An apparatus in a digital TV (abstract, and col. 12 lines 40 – 45), the apparatus comprising:

a preprocessing part configured to collect sample audio data, to extract features from the collected sample audio data and to classify the extracted features according to preset audio kinds by using a learning model (modules of Fig. 2A);

an audio mode determining part configured to determine an audio kind of a listening audio by pattern-matching a feature of the listening audio with the classified features (modules of Fig. 2B).

Burges does not disclose automatically switching an audio mode in the digital TV or switching an audio mode according to the determined audio kind.

However, switching an audio mode according to an analysis done on an input audio signal is notoriously well known in the art. For example Tanaka discloses a

reproducing device that detects an audio mode and sets a television accordingly (Fig. 4). It would have been obvious to apply the analyzation technique taught by Burges to the audio mode detecting/setting device of Tanaka. One of ordinary skill in the art would have known to apply a known technique (the analyzation of Burges; which can be applied to any number of classification or identification tasks col. 13 lines 1 - 8; for example identifying an audio mode) to a known device (reproduction and audio switching system of Tanaka) ready for improvement to yield predictable results (i.e. Tanaka would now have another level of analyzation of the audio input signals in order to more accurately reproduce the audio).

Regarding **Claim 2**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the preprocessing part (Fig. 2A) comprises:

a sample audio database configured to collect and to store the sample audio data in the sample audio database (Module 240; feature extraction module 230 will produce features which then correspond to the known data 235, these extracted or "learned" features are then provided to an exemplary feature data base 240 for subsequent use in any number of classification retrieval, and identification tasks involving a signal input; col. 12 lines 59 – 67 and col. 13 lines 1 – 8) ;

a first feature extracting part configured to extract the features of the sample audio data stored in the sample audio database (Fig. 2A; 230); and

an audio kinds sorting part configured to classify the extracted features according to the preset audio kinds (te portions of the device that provide the extracted/learned features to the exemplary feature data base 240 after the features are determined by 230).

Regarding **Claim 3**, in addition to the elements stated above regarding claim 2, the combination further discloses:

wherein the first feature extracting part extracts the features from the sample audio data by using any one selected from the group consisting of ICA (Independent Component Analysis), PCA (Principle Component Analysis), clustering, and vector quantization (oriented principle component analysis; lower portion of column 12).

Regarding **Claim 5**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the audio mode determining part (Fig. 2B) comprises:

a second feature extracting part configured to extract the feature from the listening audio if the listening audio is inputted (230, which is considered to be a 'second feature extracting part' as now it has been reconfigured into the determination portion as shown in 2B which differes from the device in 2A);

a pattern matching part configured to pattern-match the feature of the listening audio with the classified features and out-putting a result of the pattern-matching (Fig. 2B 260);

an audio sorting determining part for determining an audio kind of which a feature is the most similar to the feature of the listening audio based on the result of the pattern-matching. The features claimed in this part are equivalent to the functions performed by element 260 of Fig. 2B, however they are part of the same module. However, separation of parts has been held to be an obvious modification; see MPEP 2144.04 V).

The combination further discloses:

an audio mode switching part configured to switch a current audio mode to an audio mode with respect to the determined audio kind (the results are provided to a user or other application for further processing; col. 13 lines 25 - 28; in the combination they are provided to the mode determining portion of Tanaka for setting the audio mode accordingly as shown in claim 1).

Regarding **Claim 6**, in addition to the elements stated above regarding claim 5, the combination further discloses:

wherein the first feature extracting part extracts the features from the sample audio data by using any one selected from the group consisting of ICA (Independent Component Analysis), PCA (Principle Component Analysis), clustering, and vector quantization (oriented principle component analysis; lower portion of column 12).

Regarding **Claim 7**, in addition to the elements stated above regarding claim 5, the combination further discloses:

wherein the pattern-matching part pattern-matches the feature of the listening audio with the classified features by using any one selected from the group consisting of dynamic programming, HMM (Hidden Markov Model) method, and neutral network method (feature extractor is a convolutional neural network employing layered OPCA; col. 16 lines 40 - 55).

Claims 8 – 10 and 12 – 14 are rejected under the same grounds as the claims above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW C. FLANDERS whose telephone number is (571)272-7516. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew C Flanders/
Patent Examiner
Art Unit 2614